

CONTRIBUTIONS TO OUR
KNOWLEDGE OF OLD WORLD
ARALIACEAE

W. R. PHILIPSON

AN UNDESCRIBED SPECIES OF
MASTICHODENDRON (SAPOTACEAE)
FROM BARBADOS AND ANTIGUA

H. E. BOX AND W. R. PHILIPSON

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THE BRITISH MUSEUM (NATURAL HISTORY)
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By W. R. PHILIPSON

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I. A REVISION OF THE GENUS *MACKINLAYA* F. MUELL. (WITH *ANOMOPANAX* HARMS)

THE range of the genus *Mackinlaya*, as it is treated in the present revision, that is, with the inclusion of *Anomopanax*, extends from Celebes and the Philippines, through New Guinea to the Solomons and Queensland. The genus first became known at the two extremes of its range, in Queensland and Celebes, and the species from these places were put into separate genera. The subsequent discovery of several species in New Guinea leaves no doubt that the two genera should be united. It is unfortunate that most species have been attributed to the more recent of the two genera, so that several new combinations are required.

The genus *Mackinlaya* was founded by Ferdinand von Mueller in 1864 to include a very distinctive araliaceous plant from Queensland which he had described four years earlier as a species of *Panax*. The genus remained monotypic until 1909, when Hemsley distinguished another species (*M. confusa*) from Queensland and one (*M. amplifolia*) from Dutch New Guinea. No further species have been described in the genus until the present. When Harms, in 1902, described three Malaysian plants as species of a new genus, *Anomopanax*, he recognized their relationship with the Australian genus *Mackinlaya*, but considered that their slightly different inflorescence, together with the distinct geographical distribution as then known, justified the description of a new genus. However, when a species was found in New Guinea (*A. schlechteri*) he expressed doubts as to the validity of his own genus.

Since that time four more species of *Anomopanax* have been described from New Guinea and the Philippines. All the species agree with the original species of *Mackinlaya* in habit, and in having leaves either palmately divided or reduced to a single leaflet (not infrequently the central leaflet, or the three central leaflets, are either lobed or compound, a character rarely found in other genera of the Araliaceae). Another foliar character rare in the family is the insertion of the leaf-sheath round the whole circumference of the stem. It is a character present in a section of the genus *Polyscias*,

but is more typical of the Umbelliferae. A floral character shared by all the species of *Mackinlaya* and *Anomopanax* is the narrow base of the petal; this also is very rare in the family, but is characteristic of the Umbelliferae. The constantly 2-locular ovary is also more typical of the Umbelliferae than the Araliaceae, but the other characters of the fruit appear to justify the retention of these plants in the Araliaceae. The possession of so many exceptional characters in common far outweighs a technical character of the inflorescence branches, which has been the sole basis for maintaining the second genus.

Most of the species are restricted in their distribution, but throughout the range of the genus, except in Australia, plants are found with inflorescences whose finer branches divide repeatedly and whose palmate leaves have the central lobe or lobes compound in their turn, so that a pseudo-pinnate leaf frequently results. Several names have been applied to these plants in different regions, namely, in Celebes *A. celebicus*, in the Philippines *A. philippinensis*, in Dutch New Guinea *A. arfakensis* and *M. amplifolia*, and in Papua *A. variaefolius*. The authors of *A. philippinensis* and *A. variaefolius* both suggest that their species may prove to be conspecific with *A. celebicus*; I think they were justified and prefer to treat the complex as a single variable species rather than attempt to distinguish micro-species before the flora of these islands is much more fully known. As these plants occasionally bear leaves which are simply palmate (i.e. with undivided leaflets) specimens may resemble *M. confusa* rather closely. The occurrence of the simply palmate leaves in New Guinea appears to be merely the result of variation of leaf shape so common in the family, for specimens that bear them may also bear more complex leaves. On the other hand, the Queensland plants appear to bear simply palmate leaves without exception, and for this reason are retained as a distinct species.

I have found it necessary to increase the number of species with simple, or predominantly simple, leaves from two to five. All occur in New Guinea, and all are known from restricted areas. Probably other local species belonging to this group will be found in the future.

I wish to express my thanks to Dr. W. B. Turrill for permission to work on these plants in the Kew Herbarium, and to the authorities of the herbaria of the Arnold Arboretum and the Botanic Garden, Buitenzorg, for the loan of specimens.

MACKINLAYA

F. Muell., *Fragmenta*, 4: 119 (1864)

Anomopanax Harms in *Ann. Jard. Bot. Buitenzorg*, 19: 13 (1902).

Glabrous shrubs, often unbranched (sympodial). Leaves with a petiole having a dilated sheath encircling the stem and (in dried material) a constriction at the apex, and with a leaf-blade either unifoliate or digitately compound, the central leaflet, or the three central leaflets, sometimes digitately lobed or compound. Inflorescence terminal (but sympodium often continued by axillary branching), the peduncle bearing umbellately arranged branches which terminate either in umbellules or in cymes. Flowers male or hermaphrodite, the male flowers either in distinct inflores-

cences or towards the periphery of mixed inflorescences. Calyx-lobes 5-6, triangular or lanceolate. Petals 5-6, narrowed below into a distinct claw, and above into a long incurved process. Stamens 5-6; anthers sub-globose. Ovary articulated with the pedicel, inferior, with two uni-ovulate loculi. Disk prominent, with a crenulate margin. Styles two, subulate, free, recurved in fruit. Fruit strongly compressed, two-seeded (or one aborted), with a longitudinal furrow between the seeds.

KEY TO THE SPECIES

Pedicels in umbellules.

Rays of umbellules very numerous, radiating in all directions;
leaves compound.

Umbellules about 2 cm. in diam.; leaves simply palmate . 1. *macrosciadea*

Umbellules about 4 cm. in diam.; central leaflet compound 2. *radiata*

Rays of umbellules about 20, or fewer, ascending; leaves simple,
or rarely some compound.

Principal nerves 1.0-1.5 cm. apart at centre of lamina . 3. *brassii*

Principal nerves 2.0-2.5 cm. apart at centre of lamina.

Sepals triangular, 0.5 mm. long 4. *klossii*

Sepals linear, 1.0 mm. long 5. *subulata*

Pedicels not in umbellules.

Leaves simple.

Leaves ovate (about twice as long as broad) 6. *vertseegii*

Leaves ovate-lanceolate (about three times as long as broad) 7. *schlechteri*

Leaves compound.

Leaves simply palmate.

Peduncle about 1 cm. long 8. *digitata*

Peduncle about 10 cm. long, or longer.

Sepals linear, 1.0 mm. long 9. *warburgii*

Sepals triangular, 0.5 mm. long 10. *confusa*

Central leaflet(s) compound 11. *celebica*

1. *Mackinlaya macrosciadea* (F. Muell.) F. Muell., *Fragmenta*, 4: 120 (1864).

Panax macrosciadeus F. Muell., *Fragmenta*, 2: 108 (1860).

QUEENSLAND: Shoal Bay Passage, R. Brown, 6347. Fitzroy Island, Cunningham, 128; Hill, 143; MacGillivray, 269b. Rockingham Bay, Dallachy, s.n. South of Mackay, rain-forest at foot of range west from Koumala, Francis, s.n. Strathdickie, in cool shaded forest, Michael, 1051. Tinan Creek, Wide Bay District, light rain-forest in sandy soil bordering creek, C. T. White, 3518. Byfield, near Keppel Bay shrub, in light rain-forest, along creek bank, C. T. White, 8172 (fruits blue).

Specimens distributed by Mueller are probably of the type gathering, but none that I have seen is precisely localized.

2. **Mackinlaya radiata** Philipson, *sp. nov.*

Frutex simplex glaber, 1.5 m. altus. *Folia* petiolis c. 20 cm. longis basi in vaginam amplexicaulem dilatatis, apice constrictis; laminis digitatis, 5-foliolatis; foliolis infimis brevissime petiolulatis (c. 1 cm.), foliolis intermediis longe petiolulatis (c. 7 cm.), laminis foliolorum lateralium ellipticis, usque ad 20×12 cm., basi breviter cuneatis, apice acutis, margine apicem versus dentatis; foliolo terminali longe petiolulato (c. 11 cm.), lamina tripartita, lobis ellipticis vel oblongo-ellipticis, usque ad 20×12 cm. lobo terminali stipitato (c. 5 cm.). *Inflorescentia* magna; pedunculo crasso striato, ad apicem bracteato, bracteis anguste lanceolatis; ramis primariis c. 50, ad c. 18 cm. longis, pedicellis c. 130 per umbellulam, tenuibus, c. 2 cm. longis. *Flores* articulati; calycis lobis 5, triangularibus, c. 0.5 mm. longis; petalis 5, basi unguiculatis; staminibus 5, antheris oblongis; disco margine undulato; ovario turbinato, 0.7 mm. longo. *Fructus* adhuc ignotus.

NETHERLANDS NEW GUINEA: 4 km. south-west of Bernhard Camp, Idenburg River, one plant in mossy forest at 900 m., *L. J. Brass*, 13094 (type in British Museum).

The compound umbel of this species is similar to that of *M. microsciadia*, but the spherical umbellules are twice as large as those of that species. The leaves resemble those of *M. celebica*.

3. **Mackinlaya brassii** Philipson, *sp. nov.*

Frutex glaber, nanus, caule simplici. *Folia* simplicia; petiolis ad 1.5 cm. longis, basi in vaginam amplexicaulem dilatatis, lamina membranacea, lanceolata vel ovato-lanceolata, basi in petiolum angustata, apice acuta, margine remote dentata vel undulata, usque ad 18×6 cm., nervis lateralibus utrinsecus c. 10. *Inflorescentia* terminalis; pedunculo tenui, 6 cm. longo, ad apicem bracteato, bracteis anguste lanceolatis usque ad 7 mm. longis; ramis primariis c. 7, ad 5 cm. longis, ad apicem bracteatis, bracteis anguste lanceolatis usque ad 5 mm. longis; pedicellis c. 15 per umbellulam, ad c. 1.5 cm. longis, raro ramosis. *Flores* articulati; calycis lobis 5, anguste triangularibus, c. 0.75 mm. longis; petalis 5, basi unguiculatis; staminibus 5, filamentis c. 2.5 mm. longis, antheris 0.5 mm. longis; disco margine undulato; ovario oblongo, 3×1.5 mm.

PAPUA: Palmer River, 2 miles below junction of Black River, altitude 100 m.; rare in forest undergrowth, *L. J. Brass*, 7322 (type in Arnold Arboretum).

Similar in habit to *M. schlechteri*, but with more numerous veins in the leaf, and with the pedicels arranged in umbels.

4. **Mackinlaya klossii** Philipson, *sp. nov.*

Anomopanax schlechteri (non Harms) Ridley in *Trans. Linn. Soc. Lond., Ser. 2, Bot.*, 9: 63 (1916), pro parte.

Frutex glaber. *Folia* simplicia vel digitata, petiolis ad 5 cm. longis, basi in vaginam amplexicaulem dilatatis, lamina (vel foliolis) lanceolata, basi in petiolum angustata, apice longe acuminata, margine denticulata, usque ad 24×6 cm., nervis lateralibus utrinsecus c. 6. *Inflorescentia* terminalis vel pseudolateralis; pedunculo c. 15 cm. longo, ad apicem bracteato, bracteis anguste lanceolatis usque ad 1 cm. longis;

ramis primariis c. 15, c. 5–10 cm. longis; pedicellis c. 10–15 per umbellulam, 5–10 mm. longis. *Flores* articulati calycis lobis 5, triangularibus, c. 0.5 mm. longis; petalis 5, unguiculatis; staminibus 5, antheris oblongis; disco margine undulato; ovario compresso, 2 × 2 mm. *Fructus* c. 10 × 15 mm.

NETHERLANDS NEW GUINEA: Tsingarong River, Camp VIIb, 3,900 ft., *Kloss*, s.n. (type in British Museum). Kemarong River, Camp VIc, 5,500 ft., *Kloss*, s.n.

This species resembles *M. schlechteri* in habit, but has the pedicels arranged in umbels. It differs from *M. brassii* in the venation of the more chartaceous leaves.

5. ***Mackinlaya subulata*** Philipson, *sp. nov.*

Frutex glaber, nanus, caule simplici. Folia simplicia; petiolis ad 3 cm. longis, basi in vaginam amplexicaulem dilatatis, lamina obovato-lanceolata, basi in petiolum angustata, apice breviter acuminata, margine minute dentata, usque ad 14 × 5 cm., nervis lateralibus utrinsecus c. 6. *Inflorescentia* terminalis; pedunculo tenuo, ad apicem bracteato, bracteis lanceolatis, usque ad 1 cm. longis; ramis primariis c. 7, ad c. 4 cm. longis, ad apicem bracteatis, bracteis ad 5 mm. longis; pedicellis c. 18 per umbellulam, c. 1.5 cm. longis. *Flores* articulati; calycis lobis 5, linearis, c. 1 mm. longis; petalis 5, unguiculatis; staminibus 5, antheris oblongis; disco margine undulato; ovario adhuc ignoto.

NEW GUINEA (Australian Mandate): Kani Mountains, 1,000 m., *R. Schlechter*, 17723 (type in Arnold Arboretum).

Similar to *M. schlechteri* in habit, but with the pedicels arranged in umbels. It differs from *M. klossii* in the linear sepals and the more membranaceous leaves.

6. ***Mackinlaya versteegii*** (Harms) Philipson, *comb. nov.*

Anomopanax versteegii Harms in Lorentz, *Nova Guinea*, 8: 276 (1910).

Anomopanax schlechteri (non Harms) Ridley in *Trans. Linn. Soc. Lond.*, Ser. 2, Bot. 9: 63 (1916), pro parte.

NETHERLANDS NEW GUINEA: Noordfluss, *Vertseeg*, 1419 (type). Setakwa River, Canoe Camp, 150 ft., *Kloss*, s.n.

7. ***Mackinlaya schlechteri*** (Harms) Philipson, *comb. nov.*

Anomopanax schlechteri Harms in Schum. & Laut. *Nachtr. Fl. Deutsch. Südsee*: 332 (1905).

NEW GUINEA (Australian Mandate): Torricelli Mountains, 1,000 m., *Schlechter*, 14363 (type).

8. ***Mackinlaya digitata*** (Merrill) Philipson, *comb. nov.*

Anomopanax digitatus Merrill in *Philipp. J. Sci.*, 17: 301 (1920).

PHILIPPINES: Siargao, Bur. Sci. 34925, *Ramos & Panasio* (type).

I have not seen this species; its position in the key is based on the characters given in the original description.

9. **Mackinlaya warburgii** (Harms) Philipson, *comb. nov.*

Anomopanax warburgii Harms in *Ann. Jard. Bot. Buitenzorg*, **19**: 15 (1902).

CELEBES: Mt. Bonthain, 1,850 m., *Bünnemeijer*, 12304, 12408.

The type specimen (between Manipi and Leia, *Warburg*, 16137) has not been seen as it was destroyed, so far as is known, during the war of 1939-45.

10. **Mackinlaya confusa** Hemsl. in *Bull. Misc. Inform. Kew*, **1909**: 259 (1909).

M. macrosiadea (non F. Muell.) Benth. in *Fl. Austral.* **3**: 383 (1866), pro parte.

QUEENSLAND: Rockingham Bay, *Dallachy*, s.n. Bellenden Ker, common to dominant in secondary growth in forest at 5,400 ft., *Gibbs*, 6324. Dunk Island, *MacGillivray*, 269 (type in Kew Herb.). Kuranda, 1,200 ft., *Podenzana*, s.n. Thornton Peak, 700-1,000 ft., *Brass & White*, 303; 1,000-2,000 ft., *Brass*, 2330. Cook District, Etty Bay, common as undergrowth in rather light rain-forest, *C. T. White*, 11716 (fruits juicy, light blue, shining).

11. **Mackinlaya celebica** (Harms) Philipson, *comb. nov.*

Anomopanax celebicus Harms in *Ann. Jard. Bot. Buitenzorg*, **19**: 14 (1902).

Anomopanax philippinensis Harms, *l.c.* 15.

Mackinlaya amplifolia Hemsley in *Bull. Misc. Inform. Kew*, **1909**: 260 (1909).

Anomopanax arfakensis Gibbs, *Phytogeog. Arfak Mts.* 163 (1917).

Anomopanax variaefolius C. T. White in *J. Arnold Arbor.* **10**: 256 (1929).

CELEBES: Minahasa, *Koorders*, 16109b (type), 16110b, 16112b. *Kjellberg*, 994.

PHILIPPINES: Negros; Dumaguete, *Elmer*, 9516; *Curran*, 17355. Mindanao; Davao Province, *Ramos and Edano*, 49575; Zamboanga District, *Ramos & Edano*, 36831, 37294; Misamis, Mt. Malindang, *Mearns & Hutchinson*, 4686; *Merrill*, 8293. Jolo, Sulu Province; *Vidal*, 2945; *Ramos & Edano*, 43925.

NETHERLANDS NEW GUINEA: 6 km. south-west of Bernhard Camp, Idenburg River, *Brass*, 12780. Angi, Arfak Mts., *Gibbs*, 5582 (type of *A. arfakensis*); *Kanehira & Hatusima*, 13737. Geiten Noord, *Versteeg*, 1442 (type of *M. amplifolia*).

PAPUA: Eastern Division; U-uma River, *Brass*, 1439 (type of *A. variaefolius*); Oroville Camp, Fly River, *Brass*, 7409. Central Division; Bella Vista, *Brass*, 5453. Western Division; Wuroi, Oriomo River, *Brass*, 5757. Boridi, *Carr*, 13270, 14608, 14627. Alola, *Carr*, 15001.

NEW GUINEA (Australian Mandate): Morobe District; Sattelburg, *Clemens*, 7820; Matap, *Clemens*, 11106; Orgeramngang, *Clemens*, 5427a; without precise locality, *Clemens*, 2419, 4570, 6266. Sepik, *Ledermann*, 6603.

SOLOMON ISLANDS: Bougainville; Kupei Gold Field, *Kajewski*, 1704; Marmaromino, *Kajewski*, 2202. Guadalcanal; Uulolo, Tutuve Mts., *Kajewski*, 2505.

EXCLUDED SPECIES

ANOMOPANAX CUMINGIANUS (C. Presl) Merrill in *Philipp. J. Sci.* **17**: 300 (1920).

Panax pinnatum Lam. *Encycl.* **2**: 715 (1788).

Panax secundum Schultes, *Syst.* **6**: 215 (1820), nomen illegit.

Paratropia cumingiana C. Presl, *Epim.* 250 (1851).

Nothopanax pinnatum (Lam.) Miq., *Bonplandia*, **4**: 139 (1856).

Nothopanax cumingii Seem., *Fl. Vit.*: 114 (1865).

Polyscias cumingiana (C. Presl) F. Vill. in Blanco, *Fl. Filip. Nov. App.* 102 (1880).

Panax cumingiana (Presl) Rolfe in *J. Linn. Soc. Lond. Bot.*, **21**: 310 (1884).

Polyscias rumphiana Harms, *Pflanzenfam.* **3**, 8: 45 (1898).

Polyscias sorongensis Gibbs, *Phytogeog. Arjak Mts.* 216 (1917).

This species was incorrectly attributed to *Anomopanax*. It differs from that genus in foliage characters, having truly pinnate leaves; in inflorescence characters, the primary branches being scattered on the rhachis; and in a very important floral character, having petals with broad insertions. It approaches the species of *Mackinlaya* in appearance because it has amplexicaul leaf-sheaths, articulated flowers, and two-locular ovaries, although this last character is not invariable, as it is in *Mackinlaya*.

The excluded species is clearly a member of the genus *Polyscias*; indeed, it agrees so closely with the type species of the genus (*P. pinnata* J. R. & G. Forst., a Polynesian species) that they might almost be conspecific. The Forsters' species, however, has more orbicular leaflets and a gynoeceium of four carpels, compared with the two to three carpels of the species under discussion. In his treatment of *Polyscias* in *Die Nat. Pflanzenfamilien*, Harms accepted a statement by Baillon that the Forsters' specimen had seven carpels, and therefore failed to appreciate the relationship between the type species of the genus and the group of Malayan species that includes the present species (which he called *Polyscias rumphiana* Harms). This Malayan group of species corresponds to those placed by Seemann in *Nothopanax* (a genus erected by Miquel to include *Panax fruticosum* L. and some related species). Seemann did not refer these species to *Polyscias*, because he regarded the possession of a dimerous ovary of generic importance. As the characters shared by these plants include an amplexicaul leaf-sheath, articulated inflorescence branches, and free, tapering styles, it is clear that *Nothopanax* should be reduced to a synonym of *Polyscias*. It might be possible to restrict the name *Polyscias* to this small recognizable group of species, but the wide application now given to this generic name is perhaps justified in view of the considerable variation in the group as a whole. It is evident, however, that the current use of the generic name *Nothopanax* Miq. for certain Australasian and Chinese Araliaceous plants unrelated to the species originally included by Miquel is unjustifiable.

II. NEW SPECIES AND NEW RECORDS FROM NEW GUINEA AND THE SOLOMON ISLANDS

The collections obtained by the American expeditions to New Guinea under the leadership of Mr. Richard Archbold contained a considerable number of Araliaceous plants. These, together with other collections from New Guinea and the Solomon Islands, were kindly lent to me by the authorities of the Arnold Arboretum. Nineteen new species are described here, and three species are recorded from the area for the first time. *Aralia apoensis* Elmer, described from the Philippines, was collected at the extreme north-west of New Guinea by Kanehira and Hatusima; the Australian *Polyscias macgillivrayi* (Seem.) Harms was obtained by Brass in southern Papua;

and the Polynesian *Delarbrea collina* Viellot has been collected in the Solomon Islands by Brass and Waterhouse.

Plerandra micrantha Philipson, *sp. nov.*

Arbuscula usque ad 10 m. alta. *Folia* digitata, glabra; petiolus usque ad 24 cm. longus, vagina in appendicem intrapetiolaem 1.5 cm. longam producta; foliola c. 11; petiolulus c. 2 cm. longus; lamina obovata vel anguste elliptica, basi angustata, apice acuminata, margine undulata revoluta, 14 × 4.5 cm., costa subtus prominenti, nervis lateralibus multis parallelis. *Inflorescentia* terminalis; rhachis brevis, c. 1.5 cm. longa; ramuli primarii c. 12, 7–8 cm. longi; pedicelli c. 6 per umbellulam, c. 7 mm. longi. *Flores* virides, omnes ut videtur hermaphroditi, 6 mm. longi (ante anthesin). *Calyx* undulatus. *Petala* 5, 3 mm. longa. *Stamina* numerosa. *Ovarium* turbinatum, c. 8-loculare, c. 3 × 3 mm.; styli c. 8, breves. *Fructus* niger, 8 × 7 mm.

SOLOMON ISLANDS: Guadalcanal; in stunted rain forest at 1,700 m., S. F. Kajewsky, 2619 (type in Arnold Arboretum, duplicate in British Museum).

The foliage is very similar to that of *P. solomonensis* Philipson, but the flowers are very much smaller and the inflorescence branches to the third degree.

Plerandra solomonensis Philipson, *sp. nov.*

Arbor erecta usque ad 33 m. alta, sparsim ramosa. *Folia* digitata, glabra; petiolus usque ad 30 cm. longus sed saepe brevior, vagina in appendicem intrapetiolaem 1 cm. longam producta; foliola c. 7; petiolulus 1–2 (–2.5) cm. longus; lamina obovata, basi attenuata, apice acuta vel subacuminata, margine undulata revoluta, usque ad 18 × 6 cm., costa subtus prominenti, nervis lateralibus obscuris. *Inflorescentia* subterminalis; rami primarii c. 5, crassi, usque ad 28 cm. longi; pedicelli c. 20 per umbellulam, 4 cm. longi. *Flores* omnes hermaphroditi vel exteriores masculi, c. 20 mm. longi (ante anthesin). *Calyx* undulatus. *Petala* 5, crassa, 1 cm. longa. *Stamina* numerosa. *Ovarium* turbinatum, c. 10-loculare, c. 10 × 7 mm.; styli c. 10, breves. *Fructus* ellipsoideus, 2.8 × 1.5 cm., obscure sulcatus, calyce persistenti, stylis obscuris.

SOLOMON ISLANDS: Bougainville; Kupei Gold Field, 950 m., S. F. Kajewsky, 1653 (type in Arnold Arboretum, second sheet; duplicate in British Museum); Buin, Koniguru, 970 m., S. F. Kajewsky, 2053. Ysabel; Tiratona, L. J. Brass, 3320. Guadalcanal; Vulolo, Tutuve Mountain, S. F. Kajewsky, 2576.

This is at once distinguished from *P. brassii* Philipson and the New Guinea species (*P. stahlian*) by the much smaller leaflets, and the more numerous fruiting pedicels. From *P. micrantha*, which has similar foliage, it differs by its larger flowers and simple, not compound, umbelules. The field notes state that it is common in rain-forest and that the fruits are purple-black. Its native name on Ysabel is *Babaroana* and the sap is said to be used for relieving constipation.

Plerandra brassii Philipson, *sp. nov.*

Arbor usque ad 20 m. alta, sparsim ramosa. *Folia* digitata, glabra; petiolus usque ad 40 cm. longus, vagina in appendicem intrapetiolaem producta; foliola c. 7; petiolulus usque ad 5 cm. longus; lamina obovata, basi sensim attenuata, apice obtusa vel subacuminata, usque ad 30 × 12 cm., costa subtus prominenti, nervis

lateralibus utrinsecus 10-12, prominentibus. *Pedunculus* crassus, 20 cm. longus, c. 10- florus; pedicelli 4.5 cm. longi. *Flores* omnes ut videtur hermaphroditi. *Fructus* ovoideus, calyce styloque conico prominenti (stigmatibus 14) coronatus.

SOLOMON ISLANDS: San Cristoval; Star Harbour, *L. J. Brass*, 3105 (type in Arnold Arboretum).

This species has leaves approximately the same size as those of *P. stahlia* but the inflorescence and fruit are different. In *P. stahlia* the number of pedicels is much greater and the outer, male, flowers drop off as the fruits ripen. In *P. brassii* there are much fewer pedicels and none is shed. The fruit is also distinctive, having a persistent calyx and prominent style.

Tetraplasandra solomonensis* Philipson, *sp. nov.

Arbor erecta simplex, 3 m. alta. *Folia* imparipinnata, glabra, 80 cm. longa; petiolus teres, 20 cm. longus; rhachis nodosa; foliola 7-10 cm. longa; lamina oblongo-elliptica, basi inaequaliter angustata, apice acuminata, margine remote crenato-dentata, costa prominenti, nervis lateralibus visibilibus. *Inflorescentia* terminalis; rhachis crassa, 40 cm. longa; rami primarii 8-10 cm. longi; pedicelli c. 7 per umbellulam, 15-18 mm. longi (ad anthesin). *Flores* 8×5 mm. (ante anthesin), ad anthesin c. 15 mm. diam. *Calyx* undulatus. *Petala* c. 9, triangularia. *Stamina* numerosa. *Ovarium* compressum, 5×5 mm.; styli 7-13, ad centrum disci plani biseriatim dispositi.

SOLOMON ISLANDS: San Cristoval; Hinuahauro, in mountain rain-forest at 900 m., *L. J. Brass*, 2866 (type in Arnold Arboretum, first sheet).

The Solomon Islands lie between the two previously known centres of distribution of this genus, namely, Hawaii and the eastern Malayan islands. The species now described from San Cristoval resembles the Malayan members of the genus more closely than the Hawaiian. Its foliage is very similar to that of *T. paucidens* Miq., but the long branches and large flowers give its inflorescence a characteristic appearance. The three species described from the Malayan region (including the Philippines) may prove to be conspecific. I have examined the type gathering of *P. paucidens* Miq. and *P. philippinensis* Merrill, and conclude that the differences referred to in the original description of the latter species are due to the young state of the inflorescence. I have not seen the type of *T. koordersii* Harms, but as material gathered by Beccari in Celebes shows wide variation in the shape of the leaflets, the value of the lanceolate leaflet as a diagnostic character may be doubted.

Boerlagiodendron tricolor* Philipson, *sp. nov.

Frutex simplex usque ad 1.2 m. altus. *Folia* ampla, palmatiloba; petiolus c. 32 cm. longus, setulosus, basi cum crista spirali setosa, vagina in appendicem intrapetiolaem lanceolatam acutam ad 3 cm. longam producta; lamina 7-loba, margine serrata membranacea, subtus praesertim ad nervos puberula, tota 35 cm. longa, lobo medio 23 cm. longo, 10.5 cm. lato, basi attenuato, apice angustato. *Inflorescentia* terminalis, puberula; rhachis brevis; radii primarii c. 40-50, 3.5 cm. longi, apice in radiolos 3-partiti, radiolus intermedius c. 4 mm. longus, umbellulam florum sterilium ovoideorum apice puberulorum 3 mm. longorum gerens; radioli laterales 2.5-3 cm. longi, medio bibracteati, apice capitulum parvum bracteis fimbriatis gerentes. *Flores* c. 30

per capitulum, sessiles vel subsessiles, c. 3 mm. longi. *Calyx* brevissimus. *Petala* 5, 1.5 mm. longa. *Stamina* 5. *Ovarium* oblongum, 1.5 cm. longum, 5-loculare; styli 5, brevissimi.

NETHERLANDS NEW GUINEA: 15 km. south-west of Bernhard Camp, Idenburg River, in undergrowth of gulley in rain-forest at 1,500 m., L. J. Brass, 12394 (type in British Museum).

This is distinguished from other New Guinea species with sessile flowers and few ovary-loculi by its large, broadly lobed leaves with setulose petioles. The collector describes the inflorescence branches as purple, the fruits (i.e. the sterile flowers) as black, and the (fertile) flowers as orange.

Boerlagiodendron russellensis Philipson, *sp. nov.*

Frutex usque ad 3.5 m. altus, ramulis crassis. *Folia* ampla, palmatiloba; petiolus crassus, ut videtur 30 cm. vel ultra longus, basi cum crista spirali pectinata, vagina in appendicem intrapetiolaem amplissimam (c. 5×2.5 cm.) producta; lamina usque ad 60 cm. longa, basi cordata, profunde 5-loba; lobi elliptica, lobulati, apice acuti, margine serrati, basi sinibus latiusculis rotundatis sejuncti. *Flores* adhuc ignoti. *Infructescentia* terminalis, sparse furfuracea; rhachis brevis, crassa; radii primarii 12, c. 5 cm. longi; radii secundarii (fertiles) c. 5–6 cm. longi, prope basin articulati; pedicelli c. 7 per umbellulam, c. 10 mm. longi, apice dilatati. *Fructus* depresso-globosus, subcompressus, c. 9×11 mm., c. 14-locularis; styli c. 4, sessiles, ad centrum disci plani biseriatim dispositi.

SOLOMON ISLANDS: Russell Islands; in deep jungle, R. T. Brice, 18 (type in Arnold Arboretum).

This species would stand next to *B. pfeilii* (Warb.) Harms in the key to the New Guinea species published by Harms (*Engl. Jahrb.* 56: 277 (1921)) because the flowers are pedicellate and the fruits have about fourteen loculi. It differs from the description of that species, however, in having the petiolar crest pectinate and the margins of the leaf-lobes regularly serrate. The primary rays are much shorter than those of *B. pfeilii*, and the fruits are broader than long. In the fresh condition the fruits are described as white, with the corolla scar and the stigmas red.

Meryta spathipedunculata Philipson, *sp. nov.*

Arbor usque ad 12 m. alta, ramulis glabris crassis. *Folia* simplicia, glabra; stipulae discoideae irregulariter lobatae; petiolus teres, c. 13 cm. longus; lamina obovata, basi attenuata, apice obtusa vel subemarginata, c. 30×12 cm., costa subtus prominenti, reticulo etiam conspicuo. *Flores* adhuc ignoti. *Infructescentia* terminalis; ramuli primarii c. 12, crassi, compressi, c. 11 cm. longi; ramuli secundarii 2, c. 14 cm. longi, prope basin articulati, apice expansi; receptaculum ovoideum, 1 cm. diam., fructibus c. 6. *Fructus* sessilis, globosus, 13×16 mm., 9-locularis; columna stylaris crassa, conica.

SOLOMON ISLANDS: Guadalcanal; Vulolo, Tutuve Mountain, common in rain-forest at 1,200 m., S. F. Kajewski, 2527 (type in British Museum).

This species is characterized by the long branches of the inflorescence which end in

expanded receptacles, each of which bears about six sessile fruits. Native name: *Targoie*.

Polyscias fraxinifolia* Philipson, *sp. nov.

Frutex simplex saepe epiphyticus, usque ad 1–2 m. altus, trunco gracili glabro. *Folia* imparipinnata, usque ad 34 cm. longa; petiolus usque ad 7 cm. longus; rhachis gracilis, articulata; petiolulus c. 4–7 mm. longus; lamina obovata vel elliptica vel anguste elliptica, basi angustata vel subrotundata, apice angustata vel subacuminata, margine minute setoso-crenata, costa prominenti, nervis lateralibus paucis, nervis tertiariis obscuris. *Inflorescentia* terminalis, corymbosa; rhachis brevis (1–2 cm.); rami primarii c. 4, subaequales, c. 3–4 cm. longi; rami secundarii subumbellati, usque ad 1 cm. longi; pedicelli umbellati, c. 6 per umbellulam, 4 mm. longi. *Flores* (ante anthesin) 3.5 mm. longi. *Calycis* lobi minuti, triangulares. *Petala* 5, triangularia. *Stamina* 5, filamenta brevi, anthera rotundata. *Ovarium* turbinatum, c. 2 × 2 mm., 5-loculare; styli 5. *Fructus* adhuc ignotus.

NETHERLANDS NEW GUINEA: 15 km. south-west of Bernhard Camp, Idenburg River, *L. J. Brass*, 11874 (type in British Museum), 12112, and 12433; 18 km. south-west of Bernhard Camp, Idenburg River, *L. J. Brass*, 12633.

This species is not closely comparable with any other known New Guinea species of the genus. It is characterized by once-pinnate leaves, the leaflets dark green above and pale green below, and with setae on the tips of the crenations. The inflorescence is short and corymbose. The five styles are at first erect but become divergent in the young fruit. The specimen 12633 has a slightly different aspect to the other gatherings, perhaps due to the exposed situation in which it was growing. The species is said to be frequent in mossy forest at 1,800 m.

I have not seen authentic material of the three species of *Polyscias* which have their styles united (*P. schultzei* Harms, *P. gjelleruppii* Harms, and *P. caroli* Harms), but specimens which appear to agree with the descriptions of the first two of these species (*Clemens* 3742, 4514, and *Brass* 5409) seem better placed in *Kissodendron*. No doubt this genus is closely related to *Polyscias*, but it would appear preferable to keep this recognizable group of species distinct from the larger genus, especially as their geographical range is limited and continuous. *Kissodendron* would then comprise the three species named above, together with *K. bipinnatum* Gibbs and the type species, *K. australianum* F. Muell., which is known also from New Guinea (syn. *Panax zippelianum* Miq.).

Polyscias belensis* Philipson, *sp. nov.

Arbor usque ad 14 m. alta. *Folia* imparipinnata, usque ad 60 cm. longa; petiolus ad 12 cm. longus, supra late canaliculatus; rhachis articulata; foliola subsessilia vel petiolulis ad 1 cm. longis suffulta; lamina elliptica vel elliptico-lanceolata, basi angustata, apice obtusa, margine leviter revoluta, costa conspicua, nervis lateralibus utrinsecus c. 12. *Inflorescentia* terminalis; rhachis crassa, c. 18 cm. longa; rami primarii numerosi (c. 25) divaricati, ad 23 cm. longi, umbellulas racemosas gerentes; rami secundarii umbelluliferi c. 15 mm. longi; pedicelli c. 5 mm. longi. *Flores* (ante anthesin) c. 4 mm. longi. *Calyx* undulatus. *Petala* 4, oblonga. *Stamina* 4, filamenta

brevissimo, anthera oblonga. *Ovarium* turbinatum, c. 2×1.5 mm., 4-loculare; styli 4. *Fructus* adhuc ignotus.

NETHERLANDS NEW GUINEA: Bele River, 18 km. north-east of Lake Habbema, 2,200 m. camp, L. J. Brass and C. Versteegh 11,112 (type in British Museum).

The inflorescence of this species is similar to that of *P. Forbesii* Baker fil., but the base of the leaflets is cuneate not truncate, the margin revolute and subentire not crenate, and the principal veins are fewer. It is said to be a rare tree in old secondary forest at 2,240 m. altitude. The tree was 14 m. high, and the trunk 35 cm. in diameter, with a small crown; the fairly smooth black bark is 7 mm. thick, and the wood soft and brown.

Polyscias macgillivrayi (Seem.) Harms.

Polyscias sp. C. T. White in *J. Arnold Arbor.* 10: 255 (1929).

PAPUA: Domara River, L. J. Brass, 1606.

This provides another example of the close affinity between the floras of Papua and Queensland.

Schefflera* (§ *Cephaloschefflera*) *gigantea* Philipson, *sp. nov.

Arbuscula vel *frutex*. *Folia* digitata, glabra; petiolus crassiusculus, lenticellatus; foliola 9 vel ultra; petiolulus 6–11 cm. longus; lamina oblonga, basi rotundata, apice rotundata breviter acuminata, margine leviter revoluta undulata, 33×11 cm. vel ultra, coriacea. *Inflorescentiae* rhachis crassa, lenticellata; capitula pedicellata, racemosa, subglobosa, 3–4 cm. diam. (post anthesin), involucri bracteis 4 latissime rotundato-truncatis glabris, pedicello c. 2 cm. longo crassiusculo glabro. *Calycis* margo inconspicuus. *Corolla* adhuc ignota. *Staminum* cicatrices c. 20. *Ovarium* obconicum, sulcatum, c. 20-loculare; discus hemisphaericus, 5–7 mm. altus, c. 20-sulcatus; columna stylaris 1.5–2 mm. longa, 2 mm. crassa; stigmata c. 20, disciformia.

NEW GUINEA (Australian Mandate): Morobe District; Ogeramnang, 5,800 ft., Clemens 5386 (type in Arnold Arboretum); Auemburg, 2,000 ft., Clemens 2114.

This species is similar to *S. thamasiantha* Harms, but the pedicels of the capitula are longer and the style is distinctly columnar.

Schefflera* (§ *Cephaloschefflera*) *secunda* Philipson, *sp. nov.

Arbuscula vel *frutex*. *Folia* digitata, glabra; petiolus gracilis, levis; foliola c. 5; petiolulus c. 3 cm. longus; lamina obovata, basi cuneata, apice subacuminata acuta, $9-10 \times 3.5-4$ cm. *Rhachis* crassa, c. 40 cm. longa; capitula pedicellata, racemosa, secunda, c. 8-flora, 10 mm. diam. (ad anthesin), involucri bracteis 4, latissime rotundatis subfimbriatis. *Calycis* margo inconspicuus. *Corolla* conica vel subcylindrica, apice obtusa. *Stamina* 8. *Ovarium* conicum vel subcylindricum, late sulcatum, apice obtusum; stigmata sessilia.

NETHERLANDS NEW GUINEA: Kanehira and Hatusima, 14008 (type in Arnold Arboretum).

This species is related to *S. pullei* Harms and *S. corallinocarpa* Harms, but the

long slender pedicels of the capitula, and other characters, do not agree with the descriptions of those species.

Schefflera (§ Cephaloschefflera) barbata Philipson, *sp. nov.*

Arbuscula usque ad 15 m. alta, ramulis crassis. *Folia* digitata; petiolus c. 25 cm. longus, glabrescens vel sparse stellato-tomentosus apice setulosus, vagina setosa in appendicem intrapetiolaem producta; foliola c. 16; petiolulus c. 3–6 cm. longus, glabrescens vel sparse stellato-tomentosus; lamina obovata, basi rotundata apice subacuminata obtusa, usque ad 12×4.3 cm., glabra. *Inflorescentia* terminalis; rhachis usque ad 26 cm. longa, dense setuloso-villosa; capitula pedicellata, racemosa, globosa, c. 12-flora, c. 5 mm. diam. (ad anthesin), densa, inter flores dense longe setulosa, pedicello 10–12 mm. longo setuloso-villoso (retrorse ad apicem), bracteis caducis basi setulosis. *Petala* et *stamina* adhuc ignota. *Ovarium* obconicum, angulatum, 5-loculare, disco subplano; stylus simplex c. 1 mm. longus.

PAPUA: Central Division; Murray Pass, Wharton Range, *L. J. Brass*, 4568 (type in Arnold Arboretum, Sheet I).

This species is closely related to *S. setulosa* Harms, but has larger leaves, more numerous glabrous leaflets, and smaller capitula.

Schefflera (§ Cephaloschefflera) hirsuta Philipson, *sp. nov.*

Arbuscula 5 m. alta, ramulis crassis setulosis. *Folia* digitata; petiolus c. 15 cm. longus, glabrescens; foliola 7; petiolulus 1–1.5 cm. longus, sparse stellato-tomentosus, basi setigerus; lamina obovata, basi obtusa, apice acuta appendiculata, margine superne profunde dentata, usque ad 12×4 cm., glabrescens vel sparse stellato-tomentosa. *Inflorescentia* terminalis; rhachis usque ad 33 cm. longa, dense setuloso-villosa; capitula pedicellata, racemosa, obovoidea, c. 10×7 mm., inter flores dense setulosa, pedicello c. 5 mm. longo, dense setuloso-villoso. *Petala* et *stamina* adhuc ignota. *Ovarium* obconicum, angulatum, 5-loculare, c. 2 mm. longum; stylus simplex, prominulus, c. 1.5 mm. longus.

NEW GUINEA (Australian Mandate): Morobe District; Sattelburg, 5,000–6,000 ft., *Clemens*, 7442 (type in Arnold Arboretum, duplicate in British Museum).

This species is distinguished from the other member of the section *Polyastrae* by the leaflets being toothed in their upper parts. The fur-like indumentum of the rhachis and pedicels, and the dense setae among the flowers are also noticeable.

Schefflera (§ Cephaloschefflera) reticulata Philipson, *sp. nov.*

Frutex epiphyticus, trunco simplici crasso dense ramentaceo. *Folia* digitata, glabra; petiolus usque ad 40 cm. longus, teres, levis; foliola c. 7; petiolulus usque ad 11 cm. longus; lamina oblongo-elliptica, basi late cuneata, apice angustata vel subrotundata, breviter acuminata, nervis reticuloque utrinque prominentibus vel prominulis (lamina media, sine acumine, $19-26 \times 7-11$ cm.). *Inflorescentia* terminalis, paniculata; rhachis 6–10 cm. longa, dense setosa et stellato-tomentosa; ramuli primarii 5–8, c. 12 cm. longi, stellato-tomentosi; capitula pedicellata racemosa, c. 8–10-flora, c. 5 mm. diam., minute involucreta bracteis setulosis, inter flores appendici-

bus linearibus setulosa, pedicello c. 3-4 mm. longo stellato-tomentoso. *Calycis* margo brevissimus. *Corolla* (in alabastro) subglobosa; petala 5. *Stamina* 5, filamenta gracili, anthera parva rotundata. *Ovarium* obconicum, 5-loculare; discus planus; stigmata 5, subsessilia.

NETHERLANDS NEW GUINEA: 4 km. south-west of Bernhard Camp, Idenburg River, 850 m., *L. J. Brass*, 13404 (type in British Museum); 6 km. south-west of Bernhard Camp, 1,200 m., *L. J. Brass*, 12949.

This species is similar to *S. rudolfi* Harms but has larger leaflets with close reticulations and has shorter pedicels. The dense ramentum-like bristles at the ends of the branches are also distinctive.

Schefflera* (§ *Agalma*) *archboldiana* Philipson, *sp. nov.

Arbuscula usque ad 12 m. alta. *Folia* digitata; petiolus c. 10 cm. longus, vagina in appendicem brevem obtusam intrapetioliarem producta; foliola c. 7; petiolulus 2-3 cm. longus; lamina elliptica vel obovata, basi late cuneata, apice acuminata, margine leviter revoluta, c. 7.5×4 cm., coriacea, subtus stellato-tomentosa vel glabrescens. *Inflorescentia* terminalis, paniculata; rhachis c. 20 cm. longa, sparse stellato-tomentosa; ramuli primarii c. 12, 15 cm. longi, stellato-tomentosi; pedicelli c. 8-nati, 4-5 mm. longi (ad anthesin), stellato-tomentosi. *Calycis* margo brevissimus. *Corolla* (in alabastro) subglobosa, 1 mm. longa; petala c. 7. *Stamina* c. 7, filamenta brevi, anthera rotundata. *Ovarium* obconicum, stellato-tomentosum, c. 7-loculare; stylus simplex, c. 1 mm. longus (ad anthesin). *Fructus* globosus, sulcatus, stylo prominenti c. 2 mm. longo.

NETHERLANDS NEW GUINEA: 15 km. south-west of Bernhard Camp, Idenburg River, 1,800 m., *L. J. Brass*, 11855 (type in British Museum).

Judging from the description, I conclude that this species is similar to *S. scytinophylla* Harms, but it has more numerous ovary-loculi, a longer finer style, and stellate hairs on the inflorescence.

Schefflera* (§ *Heptapleurum*) *nabirensis* Philipson, *sp. nov.

Frutex epiphyticus, ramulis crassis. *Folia* digitata, glabra; petiolus c. 40 cm. longus, teres, levis; foliola 7 (?) ; petiolulus c. 5 cm. longus; lamina anguste obovata vel lanceolato-oblonga, basi cuneata, apice acuminata, usque ad 16×5.5 cm. *Inflorescentia* terminalis, paniculata; rhachis brevis (c. 4 cm. longa), basin versus ramentis angustis brunneis dense vestita, supra furfuracea, bracteis lanceolatis furfuraceis c. 2 cm. longis; ramuli umbelliferi racemosi, graciles, glabrescentes, c. 17 mm. longi; pedicelli c. 15-20-nati, c. 7 mm. longi, graciles glabrescentes. *Calycis* margo brevissimus. *Corolla* (in alabastro) subglobosa, apice stellato-tomentosa; petala 5. *Stamina* 5, filamenta brevi, anthera rotundata. *Ovarium* obconicum, 5-loculare, disco plano, stigmatibus 5 sessilibus.

NETHERLANDS NEW GUINEA: Dalman; Nabire, *R. Kanehira* and *S. Hatusima*, 12144 (type in Arnold Arboretum).

This species is similar to *S. bractescens* Ridley, but it has smaller leaves, a much shorter rhachis, and more delicate peduncles and pedicels. The panicle resembles that

of *S. venulosa* (Wight & Arn.) Harms, except for the dense dark brown scales at the base of the rhachis

Schefflera* (§ *Heptapleurum*) *falcata* Philipson, *sp. nov.

Frutex 3–4 m. altus, ramulis crassis glabris. *Folia* digitata; petiolus crassus, glaber, vagina latissima glabra, ligula obtusa c. 2.5 cm. longa; foliola 5–7; petiolulus crassus, c. 1.5 cm. longus; lamina ovata, basi rotundata, apice obtusa, margine leviter revoluta, c. 12 × 6 cm., valde coriacea, supra nitida punctata, subtus tomento stellato-griseo dense vestita. *Inflorescentia* terminalis; rhachis crassa, c. 25–30 cm. longa, glabrescens vel sparse stellato-tomentosa; ramuli umbelliferi racemosi, c. 4–5 cm. longi, sparse stellato-tomentosi; pedicelli c. 18-nati, c. 10 mm. longi, stellato-tomentosi. *Calycis* margo minutus. *Corolla* calyptrata, obtusa, dense stellato-tomentosa; petala 6. *Stamina* 6, filamenta basi expansa 2 mm. longo, anthera 1 mm. longa. *Ovarium* turbinatum, dense stellato-tomentosum, 5–6-loculare; discus conicus; stigmata subsessilia. *Fructus* (immaturus) subglobosus, 5–6-sulcatus, c. 1 cm. longus, disco prominenti.

NETHERLANDS NEW GUINEA: Mt. Wilhelmina; three miles east of top at 3,650 m., *L. J. Brass*, 9424 (type in British Museum); 4 km. north-east of top at 3,660 m., *L. J. Brass*, 9988.

This species is characterized by its leaves, which have very broad sheaths and ligules, and very stiff leathery leaflets which are described in the field-notes as concave, and which on drying have the two halves folded together and curved backwards. The exposed undersides are densely covered in grey stellate hairs. None of the descriptions published by Harms is sufficiently like it for a comparison to be drawn. The plant is said to be abundant in timber clumps.

Schefflera* (§ *Heptapleurum*) *babalia* Philipson, *sp. nov.

Arbor usque ad 20 m. alta. *Folia* digitata; petiolus usque ad 80 cm. longus, crassus, striatus, basin versus stellato-tomentosus, supra glabrescens, vagina squamata, ligula elongata obtusa; foliola c. 14; petiolulus usque ad 11 cm. longus, glaber vel prope basin sparse stellato-tomentosus; lamina oblongo-lanceolata, basi rotundata, apice breviter acuminata, margine revoluta, usque ad 38 × 11, subtus stellato-tomentosa. *Inflorescentia* terminalis, paniculata; rhachis 130 cm. longa, dense stellato-tomentosa et setosa, bracteis lanceolatis; ramuli primarii usque ad 90 cm. longi, dense stellato-tomentosi; ramuli umbelliferi racemosi, 1.2–1.5 cm. longi, dense stellato-tomentosi et setas fimbriatas gerentes; pedicelli 20–25-nati, c. 5 mm. longi, stellato-tomentosi, basi setis fimbriatis praediti. *Calycis* margo minutus, undulatus. *Petala* 5, oblonga, obtusa, c. 1.5 mm. longa, supra stellato-tomentosa. *Stamina* 5, filamenta gracili c. 2 mm. longo, anthera rotundata c. 1 mm. longa. *Ovarium* obconicum, c. 1 mm. longum, 5-loculare, glabrescens; discus planus, sulcatus; stigmata 5, subsessilia.

SOLOMON ISLANDS: Ysabel; Tiratona, *L. J. Brass*, 3346 (type in Arnold Arboretum).

This plant occurs in rain-forest, usually on the banks of streams. Some of the measurements of the leaf and inflorescence incorporated in the description are taken from the collector's field-notes. The specific epithet is derived from the native name *babali*.

Arthrophyllum macranthum Philipson, *sp. nov.*

Arbor ramulis glabris. *Folia* imparipinnata vel superiora simplicia; petiolus c. 5–10 mm. longus; lamina (vel foliolorum vel foliorum simplicium) elliptica, usque ad 15 × 8 cm., basi anguste vel late cuneata, margine leviter revoluta. *Inflorescentia* terminalis vel axillaris; pedunculus c. 5 cm. longus; pedicelli ad 12 per umbellulam, 10–12 mm. longi. *Flores* (ante anthesin) 10–11 mm. longi. *Calyx* undulatus. *Petala* 4, triangularia. *Stamina* 4, filamentis 3 mm. longo, anthera reniformi, 1.5 mm. longa. *Ovarium* turbinatum, c. 7 × 5 mm., 1-loculare; discus crassus; columna stylaris conica, crassa. *Fructus* adhuc ignotus.

NEW GUINEA (Australian Mandate): Morobe District; Boana, 200–230 m., Clemens, 8433 (type in Arnold Arboretum).

It is with some diffidence that I describe, on rather inadequate material, a new species of a genus so much in need of revision. The present species has foliage very similar to that of the only other species known from New Guinea, viz. the widely distributed *A. diversifolium* Bl., but it is at once distinguished from that species by the large size of its flowers. The type specimen bears several immature fruits. A single unopened flower-bud was detached and dissected. The parts were re-dried, and a drawing of the floral organs was attached to the type sheet.

Aralia apoensis Elmer.

NETHERLANDS NEW GUINEA: Arfak Mountains; Angi, R. Kanehira and S. Hatu-sima, 13682.

This is the first record of this genus from New Guinea. The specimen is a good match of the type gathering of Elmer's species from Mindanao. The most distinctive feature of this species is the fringe of brown hairs along each side of the principal nerves on the underside of the leaves. Otherwise it resembles *A. bipinnata* Blanco, another species from Mindanao, which has leaves of the same shape and colouring, but glabrous. The affinity of *A. apoensis* is clearly with this other Philippine species, and not with the Javan *A. dasyphylla* Miq., as suggested by Merrill in his *Enumeration of Philippine Plants*.

Delarbrea collina Viellot.

SOLOMON ISLANDS: San Cristoval; Waimamura, L. J. Brass, 2679.

This genus is centred in New Caledonia, with species known from Timor and New Guinea. The species now found in the Solomon Islands was originally described from the Loyalty Islands, but is known also from the New Hebrides. San Cristoval is the most southerly of the Solomons. A specimen of this species collected by Waterhouse on Bougainville Island is in the Kew Herbarium.

III. NOTES ON ASIATIC ARALIACEAE

1. *The identity of the Indian, Burmese, and Siamese Dendropanax*

A species of *Dendropanax* collected in the Khasia Hills by Hooker and Thompson and also by Griffith is identified by C. B. Clark in the *Flora of British India*, 2: 733, 1879, as *Dendropanax japonicum* Seem. (= *Dendropanax trifidum* (Thunb.) Makino).

In 1924 Nakai showed that the Japanese species was not the same as that from the mainland of China, for which he proposed the name *Gilibertia sinensis* (he used the generic name *Gilibertia* for all the Asiatic species). In his revision of the Araliaceae of China, Hui Lin Li (*Sargentia*, 2: 1, 1942) reduces Nakai's name to synonymy under *Dendropanax chevalieri* (Viguier) Merr., a species described from Indo-China in 1923. Meanwhile the material from the Khasia Hills has remained unidentified; Merrill in his list of the old-world species of *Dendropanax* (*Brittonia*, 4: 131, 1941) omits reference to the *Flora of British India*, and India is not given as within the range of any species he lists. In the same paper Merrill describes a species from Burma, *D. burmanicus*. I have not seen the type of this species, but *Kingdon-Ward* 9279, which Merrill identifies with his own species, appears to be conspecific with the plants collected from the Khasia Hills. Merrill states that his species is related to *D. intercedens* (Hand.-Mazz.) Merr., but does not indicate how he considers it to differ from that species. In his paper on the Chinese Araliaceae, Li reduces *D. intercedens* to synonymy under *D. chevalieri* and suggests that a species described from Siam by Craib (Kew Bull. 1931: 206) may also prove to be conspecific. Having examined additional material from Siam I am of the opinion that one species, with leaves of rather variable texture and form, extends from Siam through Indo-China to China, and through Burma to the Khasia Hills. *D. chevalieri* should therefore be added to the floras of India, Burma, and Siam, and the names *Gilibertia siamensis* Craib, *Dendropanax burmanicus* Merrill, and *Dendropanax japonicus* (non Seem.) C. B. Clarke be added to its synonymy.

2. *New species of Brassaiopsis*

Brassaiopsis karmalaica* Philipson, *sp. nov.

Arbor c. 13–16 m. alta. *Folia* petiolata, digitata, primum sparse stellato-tomentosa; petiolus c. 30 cm. longus, teres, glaber, vagina in appendicem intrapetiolarem obtusam c. 7 mm. longam protracta; foliola 7; petiolulus c. 10 mm. longus; lamina oblongo-oblancoolata, 23 × 4.5 cm., basi angustata, apice acuminata, margine apicem versus dentata, costa conspicua subtus prominenti, nervis lateralibus utrinsecus c. 10. *Inflorescentia* 22 cm. longa, umbellulis racemose dispositis; rhachis crassa, bracteis late ovatis usque ad 20 mm. longis praedita; ramuli simplices primum furfuracei, c. 4 cm. longi, basin versus bracteam parvam gerentes; umbellulae multiflorae, densae, 3–4 cm. diam., bracteis persistentibus; pedicelli 8 mm. longi, crassi, furfuracei. *Calycis* lobi triangulares, 1.5 × 2.5 mm. longi. *Petala* 5, triangularia, crassiuscula, c. 4 mm. longa. *Stamina* 5, 4–5 mm. longa. *Ovarium* obconicum, 2-loculare, 8 × 5 mm., furfuraceum; discus crassus, 5-sulcatus; columna stylaris 1.5 mm. longa, indivisa.

TIBET: Pome; Karma La, in the lower Po Tsangpo Valley, *Ludlow, Sheriff, and Elliot*, 12244 (type in British Museum (sheet 2)). Growing at 7,000 ft. in the wet forest zone.

This species appears to resemble *B. chengkangensis* Hu in the shape of its leaves and in its massive inflorescence, but it lacks the dense indumentum of that species.

Brassaiopsis castaneifolia Philipson, *sp. nov.*

Frutex ramulis glabris. *Folia* simplicia, glabra; petiolus crassus, usque ad 13 mm. longus; lamina coriacea, oblanceolata, basi truncata, apice acuminata, margine spinescenti-dentata, costa subtus prominenti, nervis lateralibus utrinsecus c. 10 arcuato-adscendentibus. *Inflorescentia* paniculata, primum furfuracea, demum glabrescens; rhachis 25 cm. longa; rami primarii c. 8 cm. longi; rami secundarii umbelluliferi c. 2 cm. longi; umbellulae multiflorae; pedicelli ad anthesin 5 mm. longi, in fructu c. 12 mm. longi. *Calycis* lobi 5, minuti. *Petala* 5, triangularia, 3×2 mm. *Stamina* 5, filamenta 4 mm. longo, anthera 1 mm. longa. *Ovarium* obconicum, 2-loculare; discus planus, sulcatus; columna stylaris indivisa, in fructu elongata (3 mm.).

BURMA: Lat. $27^{\circ}35'$ N., long. $97^{\circ}50'$ E., 3,000–4,000 ft., *F. Kingdon-Ward*, 13537 (type in British Museum).

This species of *Brassaiopsis* may be compared with *B. simplicifolia* C. B. Clarke, which also has simple leaves. In that species, however, the petiole is much longer and the lamina is broadest near the base.

AN UNDESCRIBED SPECIES OF *MASTICHODENDRON* (SAPOTACEAE) FROM BARBADOS AND ANTIGUA

By H. E. BOX and W. R. PHILIPSON

(With Plate 1)

IN 1937 one of us (H.E.B.) collected a specimen of a Sapotaceous tree in Antigua which was evidently a species of *Mastichodendron*. The specimen consists of leafy twigs, together with seeds picked up beneath the tree, which is the only known example of the species in the island. The specimen could not be matched with any described species in this or any related genus, but it resembles three specimens in the Sloane Herbarium, preserved in the Department of Botany of the British Museum, which were collected in the late seventeenth century. One of these early specimens was collected by Sloane in Barbados in 1687 (*Herb. Sloane*, vol. 7, fol. 62) and seeds are preserved separately in Sloane's collection of seeds and fruits (items No. 1430 and 1593, mixed in one box; a third specimen of the fruits, catalogued as No. 9275, cannot be traced). A second specimen (*Herb. Sloane*, vol. 184, fol. 54) was collected in Barbados by James Reed in, or before, 1692. The third specimen, which in some ways is the best preserved, fruit and seed being mounted with a leafy twig, was in Plukenet's Herbarium before it was acquired by Sloane. Unfortunately Plukenet did not record the collector or place of origin of the specimen.

Except for misidentifications with *Mastichodendron foetidissimum* no binomial appears to have been applied to this plant, and though mentioned in several pre-Linnean works it has been lost sight of until re-collected in Antigua in 1937.

The first certain reference to the tree in botanical literature was by Plukenet in 1691, when he figured the specimen in his own herbarium (*Phytograph.*, tab. 217, fig. 5) with the name *Prunifera vel nucifera seu nuci-prunifera arbor Americana praecepsa, angustis laurifoliis, lacte virentibus. Mastichen odoratum fundens*. In his *Almagestum Botanicum* (1796) he referred to it as the 'Masticke Tree'; this name with or without the Latin phrase name was taken up by Sloane (*Cat. Pl. Jam.*: 180 (1696) and *Nat. Hist. Jam.*: 40 (1707)), by Ray (*Hist. Pl.*: 42 (1704)), and by Petiver in *Petiveriana*: 3 (1716). Sloane gave the following first-hand account of the tree in *Nat. Hist. Jam.*: 40.

'This is one of the largest trees, and highest of the Island of Barbados, where it grows every where, and is in use for all sorts of buildings. The twigs were brown and smooth, having leaves with very short, if any foot-stalks, being themselves about three inches long and about an inch broad in the middle where broadest, and whence it decreases to both extremes, being of a very curious green colour, smooth and shining, somewhat like to Bay-leaves, having one middle, and several transverse nerves running very curiously through the leaf, which is hard and not succulent. The fruit was a turbinate small plum of the bigness and shape of a Hazel-nut, having

under a membrane of thin pulp, covering a very large and smooth stone, which is hard, and includes a white kernel. It grew every where in the Island of Barbados.'

Both Sloane and Plukenet attempted to identify this Mastic tree of Barbados with trees mentioned by earlier travellers. Plukenet's references to Garcia and Acosta are evidently mistaken, these referring to a species of *Eugenia* (see Markham's translation of Garcia da Orta, *Simples and Drugs of India* (1913)). The reference to the 'Masticke' tree in John Smith's *Travels and Observations* (1630: 55) relates to the island of St. Christopher and probably to the more widely spread *Mastichodendron foetidissima* (Jacq.) H. J. Lam.¹ We are unable to interpret de Laet's reference to Mastycche (*Americae utrisque descriptio*, lib. 15, cap. 8, p. 560, 1633) and no indication of locality is given. Ligon (*True and Exact Account of the Island of Barbados*, 1657) gives a first-hand account of the 'Mastick Tree' (pp. 14 and 73), but his description cannot be linked certainly with the tree described and collected by Sloane. As he himself admits, his account of the fruit is puzzling, but it agrees with the apparently independent description by Hughes (*Nat. Hist. Barbados*, 1750: 149). The two descriptions suggest that the tree may have been subject to attack by a gall-forming insect or a witches-broom fungus.

An account of the transference of the name Mastic from certain old-world gum-bearing trees to trees in the new world with similar properties is given in the *New English Dictionary* (Oxford, 1908).

One hundred and forty-three years after Sloane described the abundance of the tree, Maycock in his *Flora Barbadosis* (1830) wrongly identified the tree with *Sideroxylon mastichodendron* Jacq. (a synonym of *Mastichodendron foetidissimum*) and stated that 'this valuable timber tree which was once so common in Barbados, is now very rarely to be seen'.

Schomburgk (*History of Barbados*, 1847) referred to the 'Mastick tree' as *Bumelia Mastichodendrum* Roem. & Schult. F. Hardy, writing in 1932 (*Agric. J., Barbados* 1 (3): 40), referred to 'an occasional specimen of Mastic (*Bumelia Mastichodendron* (?)) in Foster-Hall Wood, St. Joseph Parish, Barbados'.

In reply to an inquiry, Dr. A. E. S. McIntosh, Assistant Director of Agriculture, Barbados, wrote under date 10 May 1939:

'In my plant collecting for the local Museum I have not come across any species of the genus (*Sideroxylon*) although I am aware of Hardy's reference to the 'Mastic' tree as growing in the eastern part of Upper Foster Hall Wood. It is probable, however, that there may still be one or two isolated trees, although it is curious that in the herbarium of our Department made by the late Mr. J. R. Bovell, there are no sheets of *Sideroxylon* or its synonymous genera.'

The species is not represented in the Kew Herbarium, nor does it appear to be known in the U.S. National Herbarium at Washington. So far as we have been able to ascertain the only specimens known are those from Barbados in Sloane's Herbarium and the recent specimen from Antigua. The available evidence suggests that this species was endemic in Barbados, and by its absence from any of the intervening

¹ We attribute this combination to Lam and not Cronquist (see *Lloydia*, 9: 244, 1946); Lam's use of the generic name *Mastichodendron* was valid as the group which he raised to generic rank (*Med. Bot. Mus. Rijks univ. Utrecht*, 65: 521, 1939) had, in fact, been described by Engler (*Pflanzenfam.* 4 (i): 144, 1891) as a section *Mastichodendron* of *Sideroxylon*.

islands it may be concluded that it was introduced there from Barbados about 1695 when many settlers from Barbados arrived in Antigua under Sir Christopher Codrington. The tree, which is the only one known on the island, was growing in second-growth mesophytic woodlands in a ravine above Dark Valley, on the western slopes of Boggy Peak, at an altitude of about 350 feet.

The material available is insufficient for a full description, but as additional material is not likely to come to hand, and as it is essential to have a name by which to refer to this once well-known and important tree, we append the following description.

Mastichodendron sloaneum Box & Philipson, *sp. nov.*

Sideroxylon mastichodendron (non Jacq.) Maycock, *Fl. Barbad.*: iii (1830).

Bumelia mastichodendrum (non Roem. & Schult.) Schomburgk, *Hist. Barbad.*: 609 (1847).

Arbor alta ramulis novis et gemmis aureo-pubescentibus. *Folia* alterna glabra; petiolus brevis canaliculatus 5–12 mm. longus; lamina oblanceolata, basi attenuata, apice acuminata obtusa, c. $13 \times 3.5(5)$ cm., margine crispa, costa conspicua subtus prominente, nervis lateralibus utrinsecus c. 12. *Flores* adhuc ignoti. *Fructus* c. 20×15 mm. *Semen* oblongo-ellipsoideum vel obovoideum subcompressum; cicatrix basilateralis c. $5-6 \times 4-5$ mm., infra areolam elevatam obovatam sulco longitudinali percursam posita.

BARBADOS: Sloane, 1687. Type in *Herb. Mus. Brit.* (twigs in *Herb. Sloane*, vol. 7, fol. 62; fruits in Sloane Col. No. 1430 and 1593). Reed, c. 1692 (*Herb. Sloane*, vol. 184, fol. 54). Specimen in Plukenet's Herbarium, probably from Barbados in seventeenth century (*Herb. Sloane*, vol. 97, fol. 126).

ANTIGUA: Box, 809; Dark Valley below Boggy Peak, May 1937.

This species differs from *M. foetidissimum* (Jacq.) H. J. Lam by the shorter, thicker petiole and the more lanceolate leaf-blade, which tapers more gradually into the petiole than is typical of *M. foetidissimum*. The material collected in Antigua has slightly broader leaves and longer petioles than the Barbados gatherings, but appears conspecific with them.

PLATE I

- (a) Type specimen of *Mastichodendron sloaneum* Box & Philipson,
Herb. Sloane, vol. 7, fol. 62.
- (b) Seed of *M. sloaneum* in Sloane's collection of fruits.



FIG. 1. Type Specimen of *Mastichodendron sloaneum* Box & Philipson



FIG. 2. Seeds of *Mastichodendron sloaneum* (nat. size)

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